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PCT / IB 02 / 03793 Certificate
27 SEP 2002 PATENT OFFICE
REPUBLIEK VAN SUID-AFRIKA

DEPARTMENT OF TRADE
AND INDUSTRY

Hiermee word gesertifiseer dat
This is to certify that

the documents annexed hereto are true copies of:

Application form P.1, provisional specification and drawing of South African Patent Application No. 2002/4411 as originally filed in the Republic of South Africa on 22 April 2002 in the name of MICHAEL VON SEIDEL for an invention entitled: "A METHOD AND SPOOL FOR SHORTENING ELONGATE FLEXIBLE TENSION MEMBERS".

PRIORITY DOCUMENT
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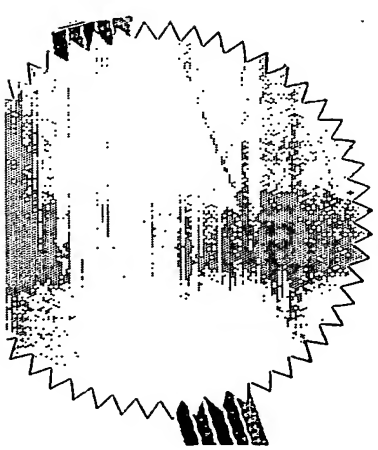
Geteken te PRETORIA in die Republiek van Suid-Afrika, hierdie 3rd dag van September 2002
Signed at PRETORIA in the Republic of South Africa, this 3rd day of September 2002



Registrateur van Patente
Registrar of Patents

FORM P1

REPUBLIC OF SOUTH AFRICA

PATENTS ACT, 1978

APPLICATION FOR A PATENT AND ACKNOWLEDGEMENT OF RECEIPT

(Section 30(1) - Regulation 39)

The grant of a Patent is hereby requested by the undermentioned applicant(s) on the present application filed in duplicate

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21	01	Official Application No. 2002/4411	22	Lodging Date 2002 -06- 03	47	Applicant's reference P0067A

71 Full name(s) of applicant(s)

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54 Title of invention

A METHOD AND SPOOL FOR SHORTENING AND OPTIONALLY TENSIONING ELONGATE TENSION MEMBERS

The applicant claims priority as set out in the accompanying form P2
The earliest priority is
This application is for a Patent of Addition to Patent (Application) No. 21 01
This application is a fresh application in terms of S 37 and based on Application No. 21 01

This application is accompanied by:-

X	1a	A single copy of a provisional specification of	7 pages
	1b	Two copies of a complete specification of	pages
	2a	Informal drawings of	Nil sheets
X	2b	Formal drawings of	1 sheets
	3	Publication particulars and abstract (form P8 in duplicate)	
	4	A copy of Figure of the drawings for the abstract	
	5	Assignment of invention (from the inventor(s)) or other evidence of title	
	6	Certified priority documents (documents)	
	7	Translation of priority documents (documents)	
	8	Assignment of priority rights	
	9	A copy of form P2 and the specification of S.A. Patent Application No. 21 01	
X	10	A declaration and power of attorney on form P3	
	11	Request for ante-dating on form P4	
	12	Request for classification on form P9	
	13a	Request for delay of acceptance on form P4	
	13b		

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Date 30th May 2002

applicant

The duplicate will be returned to the applicant's address for service as proof of lodging but is not valid unless endorsed with official stamp

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2002 -06- 03
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FORM P6

REPUBLIC OF SOUTH AFRICA

PATENTS ACT, 1978

PROVISIONAL SPECIFICATION

Section 30 (1) — Regulation 27

21	01	Official application No.	22	Lodging date
		2002/4411		2002 -06- 03

71 Full name(s) of applicant(s)

VON SEIDEL, Michael

72 Full name(s) of inventor(s)

VON SEIDEL, Michael

54 Title of invention

A METHOD AND SPOOL FOR SHORTENING AND OPTIONALLY TENSIONING ELONGATE TENSION MEMBERS

A METHOD AND SPOOL FOR SHORTENING AND OPTIONALLY TENSIONING ELONGATE TENSION MEMBERS

FIELD OF THE INVENTION

This invention relates to a method and spool for shortening and optionally tensioning elongate tension members such as, without restriction, guy ropes, clothes lines and strands of fence wires. More particularly, the invention relates to an extended application of the principles set out in my co-pending South African provisional patent application number 2002/3149 dated 22 April 2002 in which there is described, predominantly, the shortening of wires or cords used for suspending pictures in order to adjust the height at which they hang relative to a suspension nail or hook.

Still more particularly, this patent application is intended to be cognated with my said earlier patent application and, this being so, the entire content of that application is included herein by reference.

BACKGROUND TO THE INVENTION

In my said earlier patent application I describe with reference to Figure 18, an embodiment of the invention in which the handle is formed into a crank and the spool is substantially larger than in the application to wires and cords suspending pictures, the spool in this embodiment of the invention typically being made of metal rod.

OBJECT OF THE INVENTION

It is an object of the present invention to provide variations of the embodiment of the invention described with reference to Figure 18 of my

earlier application that are particularly appropriate to the taking up of slack in, and optionally the tensioning of, such items as guy ropes used to stabilize upstanding poles, tents and other such structures; clothes lines; and even strands of fence wires.

SUMMARY OF THE INVENTION

In accordance with this invention there is provided a spool for shortening and optionally tensioning an elongate flexible or deformable tension member, the spool comprising an elongate shank having associated with each end thereof a transverse retainer formation adapted operatively to prevent unravelling from the shank of a flexible tension member passing around the elongate shank with the axis of the shank extending in the same general direction as the elongate tension member; a keeper formation for cooperation with an elongate flexible tension member to enable it to be wound onto the shank by rotation thereof; and engagement means for cooperation with a separate manually operable tool for applying a rotational force to the spool by cooperation with the engagement means, and wherein the engagement means includes means for holding the spool and a cooperant part of the manually operable tool in substantial axial alignment during cooperative use of the tool on the spool.

Further features of the invention provide for the retainer formation at one end, hereinafter referred to as the free end, of the spool to define also said keeper means; for the opposite end, hereinafter referred to as the driven end, of the spool to have an axially extending axle for cooperation with a bore or socket in a cooperant part of said manually operable tool in order to align said part and the spool approximately axially during cooperant use thereof; for said retainer formation at the driven end of the spool to cooperate with the free end of the bore in said cooperant part of the manually operable tool, and in particular, for the retainer formation to be a radially extending formation a part of which is operatively received in a notch in the free end of the said

cooperant part of the manually operable tool; and for the manually operable tool to be formed as a crank configured to achieve a required mechanical advantage.

In order that the above and other features of the invention may be more fully understood different embodiments thereof will now be described with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:-

Figure 19 is an elevation of one form of spool releasably engaged by a manually operable tool for effecting rotation thereof;

Figure 20 is an elevation of a variation of the spool illustrated in Figure 19 in which two alternative stop positions are provided by diametrically opposed retainer formations at the driven end of the spool;

Figure 21 is an isometric view of a still further variation of spool having four angularly offset retainer formations at driven end of the spool; and,

Figure 22 is an isometric view of a still further alternative spool illustrating an alternative tool for cooperation therewith.

DETAILED DESCRIPTION WITH REFERENCE TO THE DRAWINGS

In the embodiment of the invention illustrated in Figure 19 the free end (40) of the shank (41), being formed of metal rod, is bent to the configuration described with reference to Figure 6 of my said earlier patent application and

indicated by numeral (15) in said Figure 18 to form a transverse U-shaped formation defining a combination retainer formation and keeper formation.

The driven end is bent radially outwards and again radially inwards to form a radially extending narrow U-shaped retainer formation (42) with the free end of the rod terminating in an axle portion (43) that defines part of said engagement means and that is axially aligned with the shank of the spool. The retainer serves also as part of the engagement means as will be apparent from what follows.

A manually operable tool, generally indicated by numeral (44), is adapted to cooperate with the spool described above by receiving the axle portion (43) in a tubular shaft (45) that has a crank (46) at its one end and, at its other end, a radially offset torque applicator (47) for cooperation with the retainer formation (42) when the axle is received within the bore of the tubular shaft. The torque applicator can simply be a bifurcated member radially offset from the tubular shaft whereby the retainer formation can be held captive whilst the spool is rotated about its own axis with the application of a suitable amount of torque. A ball catch (48), for example, can be provided on the tool to releasably hold the tool in proper cooperative association with the spool during use.

In use, with the tool and spool attached, the spool can be rendered functional on an elongate tension member such as a guy rope, clothes line or even a strand of fence wire, simply by engaging the U-shaped formation with the elongate tension member and rotating the spool by means of the tool in the manner described in my said earlier patent application. The tension member can be wound onto the spool to any extent in order to take up any slack and apply a required tension to the member and the configuration of the crank can be chosen to provide the required mechanical advantage. As will be apparent from my earlier patent application, the inclination of the spool axis to the elongate tension member can be varied and controlled to achieve the

required results, for example, to appreciably shorten the length of the tension member the axis of the spool can be orientated in a more transverse direction initially followed by a less transverse orientation towards the stage at which the retainer formation is to be engaged with the tension member. Once the retainer formation (42) at the driven end of the spool has been engaged with the tension member with the spool axis extending in the same general direction as the tension member, the tool can be disengaged from the spool.

As more fully set out in my said earlier patent application, the degree of shortening per revolution of the spool can be rather little due to the fact that the elongate tension member may be manipulated to assume, at least insofar as the last portion of tension member wound onto it is concerned, a spiral configuration that shortens the tension member far less than a full revolution with the spool axis approaching right angles to the elongate tension member. As a result it may well be that only one radially extending retainer formation is required.

However, in the event that two such retainer formations are required in order that the spool can be arrested in any selected position 180 degrees angularly offset from the previous position, then the configuration illustrated in Figure 20 could be employed. In this case the rod from which the spool is bent follows a second diametrically opposite U-shaped path to thereby form two diametrically opposite retainer formations (49). Apart from this the embodiment of the invention illustrated in Figure 20 is the same as that illustrated in Figure 19.

In the event that it is desired to arrest the rotation of the spool in selected angular positions 90 degrees offset relative to each other the arrangement illustrated in Figure 21 could be employed in which four equally angularly offset radially extending rods (50) define retainer formations at the driven end of the spool.

Figure 22 illustrates a further embodiment of the invention in which the retainer formation (51) at the driven end of the spool (52) is simply welded onto the rod from which the spool is formed. In this case the tool (53) for cooperation with the spool has a crank (54) with a tubular socket (55) adapted to receive the free end (56) of the spool with the free end of the socket having a notch (57) for cooperation with the retainer formation (51) for enabling torque to be applied to the spool.

It will be understood that numerous variations may be made to the embodiments of the invention described above without departing from the scope hereof.

Dated this 30th day of May 2002

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applicant

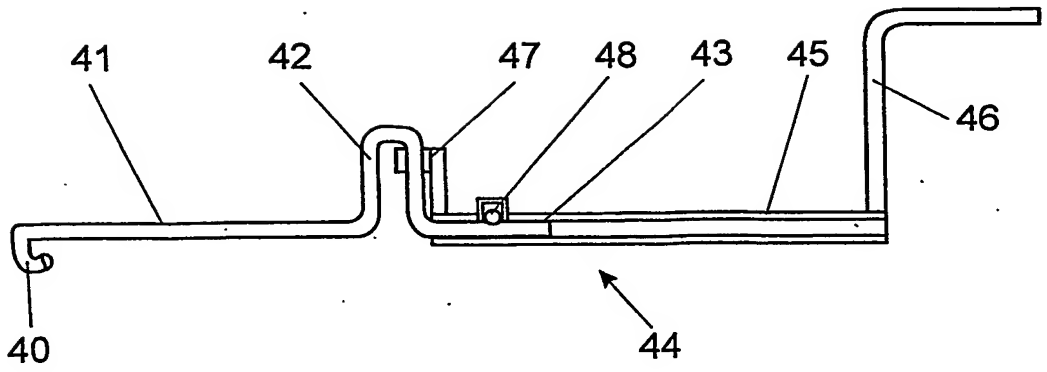

Figure 19

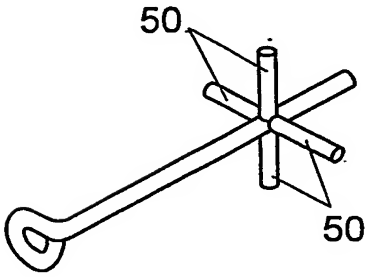

Figure 21

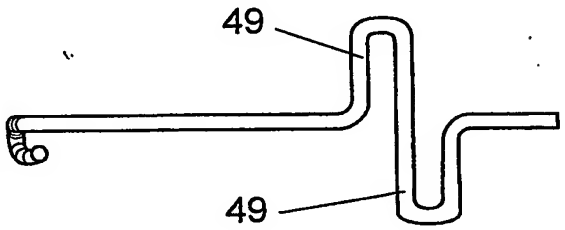

Figure 20

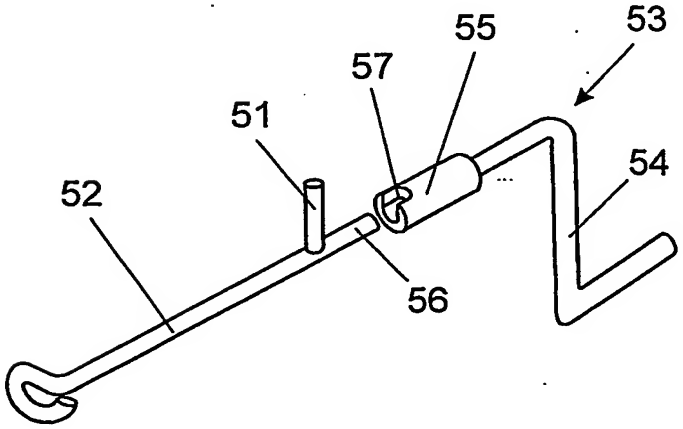

Figure 22

applicant